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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,541	03/03/2005	Volker Thole	03100232AA	5178

30743 7590 11/21/2008

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EXAMINER	
THEODORE, MAGALI P	
ART UNIT	PAPER NUMBER
1791	
MAIL DATE	DELIVERY MODE
11/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,541	THOLE ET AL.	
	Examiner	Art Unit	
	Magali P. Théodore	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment filed August 13, 2008 was received.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-2, 5-13, 16 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites that the fibers are "supplied in a stream of air." Applicant's specification refers to "the dry method" (p 2 ln 24) but does not disclose an air stream.

Claim 1 further recites a "fiber mat." Applicant's specification discloses a "nonwoven" (p 6 ln 19) but does not disclose a "mat."

Claim Rejections - 35 USC § 103

5. Claims 1-10 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ljungbo (WO 92/04169 A1) in view of Gäth et al. (DE 1127270 A1) and Moyes et al. (US 2002/0100996). All references to Gäth et al. are to the translation provided.

Regarding **claims 1-2**, Ljungbo discloses providing wood fibers in an air-stream (p 1 ¶ 2 ln 4-6), adding spray-dried sodium silicate water glass (p 3 example 1 ln 4) to wood fibers (p 2 ln 1) to form a mixture, forming a mat (cake, p 3 ln 9) and compressing that material and curing it in the closed press (p 3 example 1 ln 8-10).

Ljungbo does not specify mixing or curing temperatures. However, Gäth et al. establish these as result-effective parameters by teaching that the mixing temperature determines the extent to which the water glass foams while mixing (p 4 ¶ 1 ln 6-8) and that the curing temperature should be set according to the water content of the mixture (p 4 ¶ 2 ln 7-9). Gäth teaches mixing below 140 °C, which encompasses the 30-95 °C range recited by claim 1 and the 40-75 °C range recited by claim 2. Gäth also teaches curing low-water mixtures above 170 °C, which falls within the range (greater than 80 °C) recited by the claim. Therefore it would be obvious to an ordinary artisan to optimize the mixing and curing temperatures in the method taught by Ljungbo because Gäth et al. establish these as result-effective parameters and teaches temperatures within the ranges recited by the claim. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges

by routine experimentation." MPEP2144.05 [R-5], In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Ljungbo does not specify the density of the mat after pressing. However, Moyes et al. teach compressing a fiber mat to a density of 350-600 kg/m^3 to make an inexpensive yet effective core for a fire door (¶ 0021 ln 1-5) and compressing the same material to 900-1,300 kg/m^3 to make fire-door support structures capable of holding threaded fasteners (¶ 0021 ln 5-10). Therefore it would be obvious to an ordinary artisan to compress the fiber mat taught by Ljungbo to densities ranging from 350 kg/m^3 to 1,250 kg/m^3 because Moyes et al. teach densities of 350 kg/m^3 to 1,300 kg/m^3 as required by the product's intended use.

Ljungbo does not teach adding the water glass either before or during defibering or into a transport element of the defibering apparatus. However, adding the water glass before, during or after defibering has not been shown to produce unexpected results. While Applicant's specification explains that the water glass does not lose efficacy from being added early in the process, it is not clear that there is any benefit, either. Therefore, it would be obvious to an ordinary artisan to add the water glass at any time. Unless it produces unexpected results, the order of the steps in a method and the order in which ingredients are added does not impart patentable distinction to an invention. In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930)

Regarding **claims 3-4**, Ljungbo discloses providing wood fibers in an air stream (p 1 ¶ 2 ln 4-6), adding spray-dried sodium silicate water glass (p 3 example 1 ln 4) to

wood fibers (p 2 ln 1), mixing them to form a fiber mat (cake, p 3 ln 9), and compressing that material and curing it in the closed press (p 3 example 1 ln 8-10).

Ljungbo does not teach the presence of water vapor in the mixing step. However, Ljungbo teaches controlling the moisture content of the wood fibers (p 3 example 1 ln 7 and p 3 example 2 ln 4-5). Adding steam hydrates the wood fibers, reversing the loss of moisture to the air stream which carries them. Therefore it would be obvious to an ordinary artisan to add steam the air stream taught by Ljungbo because Ljungbo teaches controlling the fibers' moisture content and steaming the fibers would maintain their humidity.

Ljungbo does not specify mixing or curing temperatures. However, Gäth et al. establish these as result-effective parameters by teaching that the mixing temperature determines the extent to which the water glass foams while mixing (p 4 ¶ 1 ln 6-8) and that the curing temperature should be set according to the water content of the mixture (p 4 ¶ 2 ln 7-9). Gäth teaches mixing below 140 °C, which falls within the 105-180 °C range recited by claim 1 and the 110-150 °C range recited by claim 2. Gäth also teaches curing low-water mixtures above 170 °C, which falls within the range (greater than 80 °C) recited by the claim. Therefore it would be obvious to an ordinary artisan to optimize the mixing and curing temperatures in the method taught by Ljungbo because Gäth et al. establish these as result-effective parameters and teaches temperatures within the ranges recited by the claim. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges

by routine experimentation." MPEP2144.05 [R-5], In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Ljungbo does not specify the density of the fiber mat after pressing. However, Moyes et al. teach compressing a fiber mat to a density of 350-600 kg/m^3 to make an inexpensive yet effective core for a fire door (¶ 0021 ln 1-5) and compressing the same material to 900-1,300 kg/m^3 to make fire-door support structures capable of holding threaded fasteners (¶ 0021 ln 5-10). Therefore it would be obvious to an ordinary artisan to compress the fiber mat taught by Ljungbo to densities ranging from 350 kg/m^3 to 1,250 kg/m^3 because Moyes et al. teach densities of 350 kg/m^3 to 1,300 kg/m^3 as required by the product's intended use.

Regarding **claim 5**, Ljungbo discloses a mixture made from 100 parts wood fiber and 25 parts dry water glass, the wood fibers having a moisture content of 30 % prior to injection into the air stream (p 3 example 1 ln 3-7). If the ratio of water to dry fiber in the wood fiber is 70:30, then every 100 parts of wood brings with it 43 parts of water (30 × 100 ÷ 70 = 43). Therefore, the mixture, which forms the mat has a moisture content less than 26 % (43 /(100 +25 +43) = 26 %)--less than 26 % because, in the absence water vapor, water is lost to the air stream (p 3 example 1 ln 3) which carries the wood fibers. This upper limit differs from the 25 % limited recited by the claim by only one percentage point. Ljungbo also teaches varying the moisture content of the wood fibers in different applications of his invention (p 3 example 1 ln 7 and p 3 example 2 ln 4-5). Therefore it would be obvious to an ordinary artisan to vary the moisture content of the fibers such the moisture content of the mat is less than 25 % because Ljungbo teaches

a fibrous nonwoven containing less than 26 % and Ljungbo teaches varying the moisture content of the fibers used in the mixture.

Regarding **claim 6**, Ljungbo teaches adding 25 parts water glass to 100 parts dry wood fibers; 25/125 is 20 % (p 3 ln 4-7).

Regarding **claims 7**, Ljungbo teaches adding all the water glass after the defibering process (p 3 example 1).

Regarding **claim 8**, Ljungbo does not teach adding the water glass either before or during defibering or into a transport element of the defibering apparatus. However, adding the water glass before, during or after defibering has not been shown to produce unexpected results. While Applicant's specification explains that the water glass does not lose efficacy from being added early in the process, it is not clear that there is any benefit, either. Therefore, it would be obvious to an ordinary artisan to add the water glass at any time. Unless it produces unexpected results, the order of the steps in a method and the order in which ingredients are added does not impart patentable distinction to an invention. In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930)

Regarding **claim 9**, Ljungbo teaches using a silicate water glass (p 2 ¶ 3 ln 1) as in combination with a filler (p 3 last ¶ ln 1).

Regarding **claim 10**, Ljungbo teaches adding a hardener to the water glass before or after adding the wood fibers (p 2 ¶ 5).

Regarding **claim 13**, Ljungbo teaches adding 25 parts water glass to 100 parts dry wood fibers; 25/125 is 20 % (p 3 ln 4-7).

Regarding **claim 14**, Ljungbo discloses a mixture made from 100 parts wood fiber and 25 parts dry water glass, the wood fibers having a moisture content of 30 % prior to injection into the air stream (p 3 example 1 ln 3-7). If the ratio of water to dry fiber in the wood fiber is 70:30, then every 100 parts of wood brings with it 43 parts of water (30 × 100 ÷ 70 = 43). Therefore, the mixture, which forms the mat has a moisture content of than 26 % (43 /(100 +25 +43) = 26 %), which differs from the claimed upper limit by only 1 percentage point. Ljungbo also teaches varying the moisture content of the wood fibers in different applications of his invention (p 3 example 1 ln 7 and p 3 example 2 ln 4-5). Therefore it would be obvious to an ordinary artisan to vary the moisture content of the fibers such the moisture content of the mat is less than 25 % because Ljungbo teaches a fibrous nonwoven containing 26 % and Ljungbo teaches varying the moisture content of the fibers used in the mixture.

Regarding **claims 15-16**, Ljungbo teaches adding 25 parts water glass to 100 parts dry wood fibers; 25/125 is 20 % (p 3 ln 4-7).

Regarding **claims 17-18**, Ljungbo teaches fir chips (p 3 ln 1). Ljungbo does not teach adding the water glass either before or during defibering or into a transport element of the defibering apparatus. However, adding the water glass before, during or after defibering has not been shown to produce unexpected results. While Applicant's specification explains that the water glass does not lose efficacy from being added early in the process, it is not clear that there is any benefit, either. Therefore, it would be obvious to an ordinary artisan to add the water glass at any time. Unless it produces unexpected results, the order of the steps in a method and the order in which

ingredients are added does not impart patentable distinction to an invention. In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

Regarding **claim 19**, Ljungbo teaches using a silicate water glass (p 2 ¶ 3 ln 1) as in combination with a filler (p 3 last ¶ ln 1).

6. **Claims 11-12** and **20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ljungbo in view of Gäth et al. and Moyes et al. as applied to claims 3 and 10 above and further in view of Nürnberger et al. All references to Nürnberger et al. (DE 19500653 A1) are to the translation provided.

Ljungbo, Gäth et al. and Moyes et al. do not indicate the use of acid formers or additives that facilitate faster curing. However, Nürnberger et al. teach the use of carbon dioxide, an acid gas, to harden molded mixtures of wood fibers and water glass (p 9 ¶ 3 - p 10 ln 2, p 11 ln 1-3). Therefore, it would be obvious to an ordinary artisan to add to the water glass taught by Ljungbo, Gäth et al. and Moyes et al. a substance to form carbon dioxide or another acid gas because Nürnberger et al. teach using carbon dioxide as a hardener.

Response to Arguments

7. Applicant's arguments filed August 13, 2008 have been fully considered but they are not persuasive.

Applicant argues that Ljungbo is silent about the mixing temperature, the density and feeding water glass into directly into the cooking process. *In response to*

Applicant's argument, Gäth et al. suggest mixing and curing at the claimed temperatures by establishing these as result-effective parameters and teaching temperatures within the ranges recited by the claim. Furthermore, Moyes et al. suggest compressing to the claimed densities by teaching compressing to densities in that range as required by the product's intended use. Finally, since Ljungbo teaches adding the water glass, it would be obvious to an ordinary artisan to add the water glass at point in the process. Unless it produces unexpected results, the order of the steps in a method and the order in which ingredients are added does not impart patentable distinction to an invention. In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

Applicant argues that Gäth et al. do not disclose the mixing temperature, the density, closed pressing at 80 ºC or feeding water glass into directly into the cooking process. *Applicant argues* further that Moyes et al. do not disclose the mixing temperature, the density, curing at 80 ºC, using an air or vapor stream or feeding water glass into directly into the cooking process. *Applicant argues* finally that Nürnberger does not disclose the mixing temperature, the density, curing at 80 ºC, using an air or vapor stream or feeding water glass into directly into the cooking process. *In response to Applicant's arguments*, Ljungbo is the primary reference. Gäth, Moyes and Nürnberger are teaching references. No single teaching reference is required to teach or suggest every feature of claim 1. Each teaching reference is invoked because it teaches or suggests specifically those features for which it is cited. The other features are taught or suggested either by Ljungbo or by the other teaching references as delineated in the rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magali P. Théodore whose telephone number is (571) 270-3960. The examiner can normally be reached on Monday through Friday 9:30 a.m. to 6:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. P. T./
Examiner, Art Unit 1791

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791